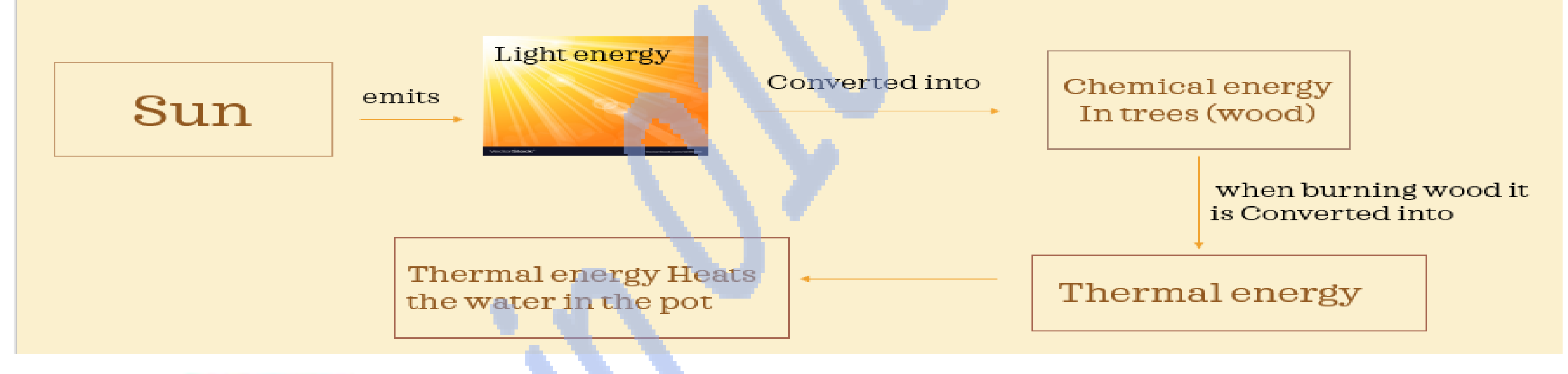
المهام الادائية

# Science Grade 4 Second term

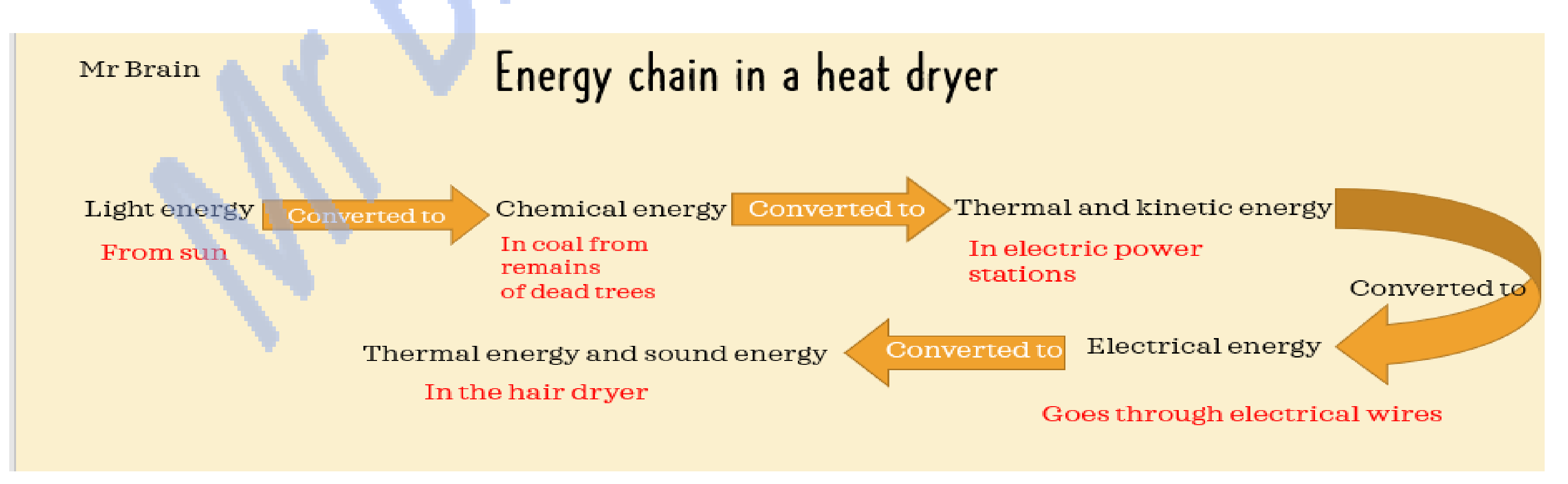
Question 1: The energy chain helps us to understand the energy consumed in operating devices

You have two pictures as following. Mention the energy chain for each one







Question 2

There are different types of vehicles according to the energy they use. Some cars work by the solar energy, others work by the electrical energy and some other use benzene.

If you were a responsible person in your city and you have to choose only on type of these cars to be used to be the official car in your city .

*How are you going to choose the car according to the following criteria?

| Criteria | Solar car | Electrical car | Gasoline car |
|---|---|---|---|
| Cheap source of energy | | | |
| Clean source of energy | | | |

| Criteria | Solar car | Electrical car | Gasoline car |
|---|---|---|---|
| Cheap source of energy | √ | x | x |
| Clean source of energy | √ | √ | x |

*Arrange the cars according to the best for your city where sun shines for a long period of time

Solar car– Electrical car – Gasoline car

*Write your decision explaining your choice

Solar car because solar energy is the cheapest source of energy and the most available source in my city that is clean and can save the city from pollution.

Question 3

There are many devices that we use in our daily life. Mention five devices, their function, the input energy and the output energy

| Device | Function | Input energy | Output energy |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| Device | Function | Input energy | Output energy |
|---|---|---|---|
| Light bulb | Lighting up | Electrical energy | Light and thermal energy |
| Hair dryer | Drying hair | Electrical energy | Thermal, sound and kinetic energy |
| Washing machine | Cleaning clothes | Electrical energy | Kinetic and sound energy |
| Television | Watching programs etc. | Electrical energy | Sound and light energy |
| Electrical bell | Alerting to open the door | Electrical energy | Sound energy and kinetic energy |

Question 4

There are many electrical devices that use specific energies and produce specific energies

Mention the input and output energies for the following devices (Light bulb, hair dryer and mobile phone)

| Device | Input energy | Output energy |
|---|---|---|
| Light bulb | Electrical energy | Light and thermal energy |
| Hair dryer | Electrical energy | Thermal, sound and kinetic energy |
| Mobile phone | Electrical energy | Sound, light and thermal energy |

Question 5

We need energy for our daily life for the purpose of operating cars, warming and house work.

From these resources: Ethanol and natural gas. Mention the similarities and differences between them

| Resource | Ethanol | Natural gas |
|---|---|---|
| Similarities | | |
| Differences | | |

| Resource | Ethanol | Natural gas |
|---|---|---|
| Similarities | Both of them are resources of energy<br>Both of them are liquid | |

| Differences | Renewable resource of energy | Nonrenewable resource of energy |
|---|---|---|
| | Formed from grass, wood chips and corn | Formed from the decomposition of the remains of dead marine animals |

Question 6

We use oil and water in our daily life tasks. Mention the differences between them

## Oil and water (different in structure)

**Oil**

- Nonrenewable energy resource
- Extracted from the underground as a result of marine organisms' decomposition over millions of years

**Water**

- Renewable energy resource
- Water resources are

Surface resources (seas and oceans)

Ground water

# Performance Tasks

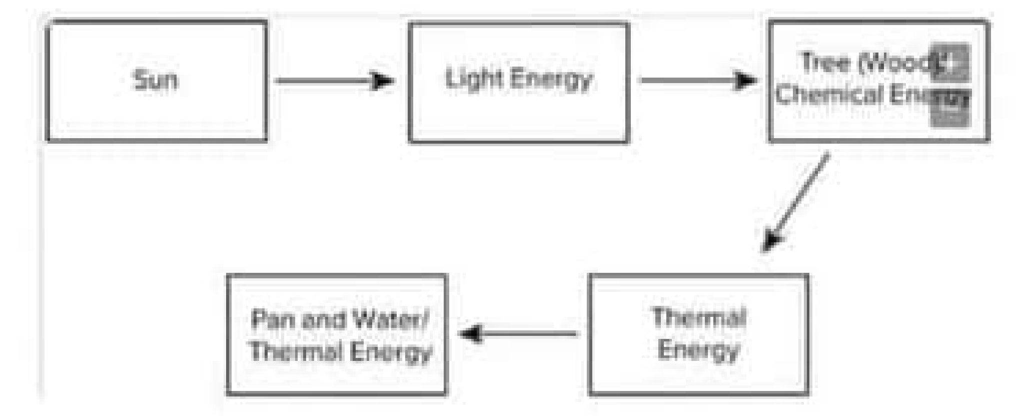
## Task no.1:

**Energy chain helps us to understand the energy used in operating devices. There are two figures in front of you. Mention the energy chains in them.**

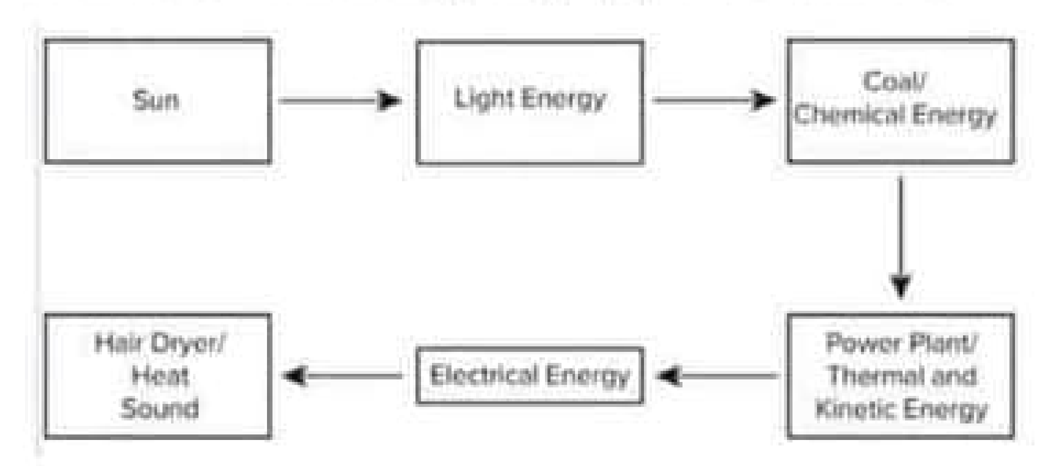


## Answer of task no.1:

**1-Heating a pan of water over a fire: The light energy of the sun helps a tree to grow. The energy is stored in the tree as chemical energy. When the wood is burned, it releases thermal energy that heats the water.**




**2-We get light and thermal energies from the sun to convert the dead trees into coal. We use coal to operate the electric power stations. Electricity transfers to the hair dryer by copper wires to work.**



**Task no.2:**

**There are several devices which we use in our daily life. Mention 5 devices, their functions, the used energy and the resulting energy.**

**Answer of task no.2:**

| Device | Function | Form(s) of used energy | Form(s) of resulting energy |
|---|---|---|---|
| Electric bulb | It lights | Electric | Light, Thermal |
| Hair dryer | Drying hair | Electric | Sound, Thermal |
| Washer | Washing clothes | Electric | Sound, Kinetic |
| Television | Watching programs | Electric | Light, Sound |
| Bell | A loud sound to open the door | Electric | Sound, Kinetic |

Task no.3:

The types of the cars may differ with the difference of the forms of the energy used. There are some cars that work by solar energy, others work by electrical energy and some others work by benzene.

If you were a decision maker in your city and you have to choose one kind of cars to be the only kind to use in your city. What kind will you choose according to these criteria?

| Criteria | Solar car | Electrical car | Fuel car |
|---|---|---|---|
| Cheap source of energy | | | |
| Clean source of energy | | | |

-Order the cars according to the preference of your city which has a lot of sunshine hours.

-Write your decision and say why.

Answer of task no.3:

| Criteria | Solar car | Electrical car | Fuel car |
|---|---|---|---|
| Cheap source of energy | √ | X | X |
| Clean source of energy | √ | √ | X |

*1-Solar car 2-Electrical car 3-Fuel car.

*Solar car use sun (cheap and clean source).

**Task no.4:**

**Several electrical devices use certain energies and produce certain energies. Can you write the inputs and the outputs of the following devices (electrical bulb- hair dryer- mobile phone)?**

**Answer of task no.4:**

| Device | Inputs | Outputs |
|---|---|---|
| Electrical bulb | Electric | Light- Thermal |
| Hair dryer | Electric | Thermal- Sound- Kinetic |
| Mobile phone | Electric- Chemical | Light- Sound- Thermal |

Task no.5:

**We need the energy in our daily life for operating the cars, warming and house works. From these sources are Ethanol and Natural gas, what are the similarities and the differences between them?**

Answer of task no.5:

| Source | Ethanol | Natural gas |
|---|---|---|
| Similarities | -Both of them are sources of energy.<br>-Both of them are liquid fuel. | -Both of them are sources of energy.<br>-Both of them are liquid fuel. |
| Differences | Formed from grass, wood chips and corn. | Formed from decomposition of remains of living organisms. |

**Task no.6:**

**We use oil and water so much in our daily life, what are the differences between them?**

**Answer of task no.6:**

| Oil | Water |
|---|---|
| -It is from nonrenewable sources of energy.<br>-It is formed from the decomposition of sea creatures. As the sea creatures died, their remains settled on the ocean floor. They became covered with layers of sediment and rock. Over many millions of years, the sediment and rock build up more and more layers. All of these layers pressed down. The layers created great pressure and heat. This pressure and heat slowly turned the remains into oil. | -It is from renewable sources of energy.<br>-Water has two sources: surface water (seas and oceans) and ground water. |